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could.
monitors [thickness] a dimensional change based on the reflected light signal.

62. (amended) The polisher as claimed in claim 61 wherein the at least one device [that monitors thickness change based on the reflected light signal comprises a photodetector connected to an interferometer or a spectrophotometer] is positioned on the same side of the substrate as the light source.

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66. (amended) A chemical mechanical polisher for planarizing a film on one side of a substrate having two sides comprising at least one light source that transmits light from the side of the substrate with the film to at least one section on the film, thereby creating at least one reflected light signal that is received by at least one device that monitors [thickness] a dimensional change based on the reflected light signal.

67. (amended) The polisher as claimed in claim 66 wherein the at least one device [that monitors thickness change based on the reflected light signal comprises a photodetector connected to an interferometer or a spectrophotometer] is positioned on the same side of the substrate as the light source.

Please add the following claims:

Rule 12b
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-- 78. An in-situ chemical-mechanical polishing process monitor apparatus for monitoring a polishing process during polishing of a workpiece in a polishing machine, the polishing machine having a rotatable polishing table provided with a polishing slurry, said apparatus comprising:

- a) a window embedded within the polishing table, said window traversing a viewing path during polishing and further enabling in-situ viewing of a polishing surface of the workpiece from an underside of the

polishing table during polishing as said window traverses a detection region along the viewing path; and

- b) means coupled to said window on the underside of the polishing table for measuring a reflectance, said reflectance measurement means providing a reflectance signal representative of an in-situ reflectance, wherein a prescribed change in the in-situ reflectance corresponds to a prescribed condition of the polishing process.

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cont'd.
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~~77~~. The apparatus of claim ~~76~~⁷⁹, wherein:

said window further being embedded within the table wherein a top surface of said window is substantially flush with a top surface of the table.

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~~78~~. The apparatus of claim ~~76~~⁷⁹, further comprising:

- c) means responsive to reflectance signal for detecting the prescribed change in the in-situ reflectance in real-time, said detection means providing an output signal indicative of the detection of the prescribed change in the in-situ reflectance.

R.126
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~~79~~. The apparatus of claim ~~78~~⁸¹, wherein:

said window further being embedded within the table wherein a top surface of said window is substantially flush with a top surface of the table.

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~~80~~. A polishing machine having in-situ polishing process monitor control of a polishing process during polishing of a workpiece on a rotatable polishing table provided with a polishing slurry, said polishing machine comprising:

- a) a window embedded within the polishing table, said window traversing a viewing path during

polishing and further enabling in-situ viewing of a polishing surface of the workpiece from an underside of the polishing table during polishing as said window traverses a detection region along the viewing path;

b) means coupled to said window on the underside of the polishing table for measuring a reflectance, said reflectance measurement means providing a reflectance signal representative of an in-situ reflectance, wherein a prescribed change in the in-situ reflectance corresponds to a prescribed condition of the polishing process.

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Cont'd.

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~~81.~~ The polishing machine of claim ~~80~~, wherein:
said window further being embedded within the table wherein a top surface of said window is substantially flush with a top surface of the table.

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~~82.~~ The polishing machine of claim ~~80~~, further comprising:
c) means responsive to the reflectance signal for detecting the prescribed change in the in-situ reflectance in real-time, said detection means providing an output signal representative of the detection of the prescribed change in the in-situ reflectance.

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~~83.~~ The polishing machine of claim ~~82~~, further wherein:
said window further being embedded within the table wherein a top surface of said window is substantially flush with a top surface of the table.

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~~84.~~ The polishing machine of claim ~~82~~, further wherein:
said detection means further comprises means responsive to the output signal for controlling the polishing process.

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~~85.~~ The polishing machine of claim ~~84~~, still further wherein:

said window further being embedded within the table wherein a top surface of said window is substantially flush with a top surface of the table.

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~~86~~. The polishing machine of claim ⁸⁷~~84~~, still further wherein:

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concl'd.
said detection means detects a polishing endpoint corresponding to the prescribed change in the in-situ reflectance, and further wherein said detection means controls the polishing process for terminating the polishing of the workpiece in response to the detection of the polishing endpoint.

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~~87~~. The polishing machine of claim ⁸⁷~~84~~, still further wherein:

said detection means detects a polishing non-uniformity corresponding to the prescribed change in the in-situ reflectance, and further wherein said detection means controls the polishing process for terminating the polishing of the workpiece in response to the detection of the polishing non-uniformity.--

REMARKS

Claims 17-35, 37-73, and 75-87 are pending. Claims 17-35, 39-51, 53-58, 60, 66-72, and 75-78 have been allowed.

Claim 74 has been canceled because it was a substantial duplicate of claim 73 following the Examiner's suggestion.

Claim 52 has been amended to depend from claim 48 following the Examiner's suggestion.

Claim 59 has been amended to change "uncouples" to "decouples" following the Examiner's suggestion.

Claims 61 and 62 have been amended following the Examiner's objection that they were substantial duplicates of claims 48 and 49. Claim 61 has been amended to generically recite "dimensional change", which encompasses (but is not limited to) the "thickness" change recited in claim 48. Support for monitoring